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Ralf Wnuk

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/587,302
Filing Date: July 26, 2006
Appellant(s): WNUK, RALF

Mark S. Bicks
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 2, 2010 appealing from the Office action mailed December 8, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 11-25.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN

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REJECTIONS.” New grounds of rejection (if any) are provided under the subheading “NEW GROUNDS OF REJECTION.”

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner.

Claims 11-18 – The rejection under 35 U.S.C. 112, second paragraph, is withdrawn.

Claims 16 and 24 – The rejection under 35 U.S.C. 112, second paragraph, is withdrawn.

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant’s brief.

(8) Evidence Relied Upon

EP0900548A1	SINDORF et al.	3-1999
2003/0213127	WNUK	11-2003

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(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Keying the Claimed Structure to the Prior Art

1. Below is Table 1, with the claimed structure of the original specification keyed to (1) the claimed structure of the substitute specification and (2) keyed to the prior art – to aid in the patentability analysis to follow.

Table 1: Keying claimed structure to that of the prior art.		
<i>Claimed Structure in Original Specification</i>	<i>Claimed Structure in Substitute Specification</i>	<i>Prior Art</i>
<i>Filter device</i> , Fig. 1.	<i>Filter device</i> , Fig. 1.	<i>Filter device</i> – Sindorf et al., Fig. 1.
<i>Filter elements</i> (28).	<i>Filter elements</i> – Fig. 1, filter elements 28.	<i>Filter elements</i> – Sindorf et al., Fig. 1, filter insert 12.
<i>Inlet opening</i> (46).	<i>Inlet opening</i> – Fig. 1, inlet opening 46.	<i>Inlet opening</i> – Sindorf et al., Fig. 1, opening between filter insert 12 and disk opening 18.
	<i>Arcuate-shaped recess</i> – Fig. 1, kidney-shaped recess 44.	<i>Arcuate-shaped recess</i> – Sindorf et al., Fig. 1, recess under filter element in filtration mode, i.e. disk opening 18.
	<i>Backwash recess</i> – Fig. 1, opening 48.	<i>Backwash recess</i> – Sindorf et al., Fig. 1, recess under filter element in backwash mode, i.e. disk opening 18.
	<i>Lower free open cross-section</i> – Fig. 1, lower opening cross section 46.	<i>Lower free open cross-section</i> – Sindorf et al., Fig. 1, opening between filter insert 12 and disk opening 18.
<i>Filter housing</i> (10).	<i>Housing</i> – Fig. 1, filter housing 10.	<i>Housing</i> – Sindorf et al., Fig. 1, filter housing 1.
<i>Filter inlet</i> (20).	<i>Fluid inlet</i> – Fig. 1, filter inlet 20.	<i>Fluid inlet</i> – Sindorf et al., Fig. 1, filter liquid inlet 5.
<i>Filter outlet</i> (22).	<i>Fluid outlet</i> – Fig. 1, filter outlet 22.	<i>Fluid outlet</i> – Sindorf et al., Fig. 1, filtrate outlet 6.
<i>Fluid outlet</i> (26).	<i>Backwash fluid outlet</i> – Fig. 1, fluid outlet (26).	<i>Backwash fluid outlet</i> – Sindorf et al., Fig. 1, back washing channel 28.
<i>Edge part</i> (14).		Sindorf et al., Fig. 1, bearing ring 14.
<i>Other part</i> (12).		Sindorf et al., Fig. 1, header 3 above multi-kant sets 16.
<i>Cavity</i> (60).	<i>Cavity</i> – Fig. 1, cavity 60.	<i>Cavity</i> – Sindorf et al., Fig. 1, chamber 11.

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<i>Pivoting device</i> (30).	<i>Pivoting device</i> – Fig. 1, pivoting device 30.	<i>Pivoting device</i> – Sindorf et al., Fig. 1, base section 2 and head section 3.
<i>Pivoting axis</i> (36).	<i>Pivot axis</i> – Fig. 1, pivoting axis 36.	<i>Pivot axis</i> – Sindorf et al., Fig. 1, extends longitudinally along axis 10.
<i>Receiving element</i> (32).	<i>Receiving part</i> – Fig. 1, receiving element 32.	<i>Receiving part</i> – Sindorf et al., Fig. 1, head section 3 and base section 2 above and below the filter insert 12.
<i>End parts</i> (38, 40).	<i>End parts</i> – Fig. 1, end parts 38, 40.	<i>End parts</i> – Sindorf et al., Fig. 1, head 3 and footer 2 that are just above and just below the filter insert 12.
<i>Drive part</i> (52).	<i>Drive part</i> – Fig. 1, rod-like drive part 52.	<i>Drive part</i> – Sindorf et al., Fig. 1, axis 10.
<i>Free-wheeling device</i> (56).	<i>Free-wheel device</i> – Fig. 1, free-wheeling means 56 with free-wheeling sleeve 56a.	<i>Free-wheel device</i> – Sindorf et al., Fig. 1, center part of plate 17 and the coupler between plate 17 and bearing 21.
<i>Drive</i> (34).	<i>Drive</i> – Fig. 1, drive or motor 34.	<i>Drive</i> – Sindorf et al., Fig. 1, rotary drive 4.
<i>Driven part</i> (54).	<i>Driven part</i> – Fig. 1, driven part 54.	<i>Driven part</i> – Sindorf et al., Fig. 1, the coupler between plate 17 and bearing 21.
<i>Sealing means</i> (42).	<i>Seal</i> – Fig. 1, sealing means or seal 42.	<i>Seal</i> – Sindorf et al., Fig. 1, “peripheral seal in a cylindrical bearing face 20 of the filter housing 1,” Translation, ¶ 14, line 7.

Claim Rejections - 35 USC § 103
Filter Device Recited in Claims 11-18

2. Claims 11, 12, 14, 15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindorf et al. (EP0900548A1, Mar. 3, 1999 – Abstract, Patent Publication, Translation).

3. Claim 11 is shown below in italics with the keyed structure from Table 1 underlined.

Claim 11. A filter device, comprising:

a filter housing having an unfiltered fluid inlet, a filtered fluid outlet and a backwash fluid outlet;

filter elements in said housing receiving fluid flow in one direction for filtration and in an opposite direction for backwashing effective filter surfaces thereof;

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a pivoting device mounting said filter elements in said filter housing for sequential rotational movement about a pivot axis between filtration positions in which unfiltered fluid flows from inside to outside through said filter elements and a backwashing position in which filtered fluid flows from outside to inside through said filter elements, said pivot(ing) device having a rotatably mounted receiving part mounting said filter elements parallel to said pivot axis along a path coaxial to said pivot axis and having first and second end parts, said filter elements extending between said end parts, said first end part facing toward said fluid inlet and rotatably guided along an inside of said filter housing by a seal; and a drive being coupled to said receiving part to rotate said receiving part, including a rod- shaped drive part releasably connecting said first and second end parts and including a pneumatic motor producing alternating to and fro movements on an output part convertible into a constant drive movement in a drive direction of said drive part by a free wheel device.

4. Sindorf et al. discloses a “backwashing filter (appellant’s filter device) [that] contains a number of independent filter candle elements (appellant’s filter elements) seated in a rotating plate so that each element can be moved into an isolated backwash chamber.” Sindorf et al., Abstract, lines 1-2. Specifically, in Fig. 1, Sindorf et al. teaches a filter housing (filter housing 1) with four filter chambers 11, each containing a filter element (filter insert 12). The Sindorf et al. filter elements are moved in succession from their filtration position into the backwashing position and back into the filtration position by means of a pivoting device (Fig. 1, base section 2 and head section 3) connected to a drive (rotary drive 4).

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5. As disclosed in Fig. 1, the Sindorf et al. housing (filter housing 1) has a fluid inlet (filter liquid inlet 5), a fluid outlet (filtrate outlet 6), and a back washing fluid outlet (backwashing channel 28). Fig. 1 also teaches that the Sindorf et al. housing contains fluid elements (filter inserts 12) that receive fluid flow outside to in for filtration, and inside to out for backwashing.

6. Sindorf et al. discloses the claimed invention except that the flow is reversed through the filter device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have arranged the Sindorf et al. filter device parts so that flow was reversed through the filter device, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955).

7. Regarding the pivot device (Fig. 1, base section 2 and head section 3), Sindorf et al. discloses that the pivot device mounts the filter elements (Fig. 1, filter inserts 12) in the housing (Fig. 1, filter housing 1) for sequential rotational movement about a pivot axis (Fig. 1, extends longitudinally along axis 10). Sindorf et al., Translation, ¶ 13, lines 1-4. The pivot device has a rotatably mounted receiving part (Fig. 1, header 3 and footer 2 above and below the filter insert 12) that mounts the filter elements (Fig. 1, filter inserts 12) parallel to and along a path coaxial with the pivot axis (Fig. 1, extends longitudinally along axis 10). Referring to Fig. 1, Sindorf et al. further teaches, "On its outer circumference, the circular perforated plate 17 is rotatably supported in a cylindrical bearing surface 20 of the filter housing 1 by means of a peripheral seal." Sindorf et al., Translation, ¶ 14, lines 7-8. This meets the limitation that the receiving part's first end (Fig. 1, base section 2 just below the filter insert 12) face toward the fluid inlet (Fig. 1, filter liquid inlet 5) and that at the first end, the filter elements (Fig. 1, filter inserts 12) be

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rotatably guided along an inside of the filter housing (Fig. 1, filter housing 1) by a seal (“peripheral seal in a cylindrical bearing face 20 of the filter housing 1,” Translation, ¶ 14, line 7).

8. Regarding the drive (Fig. 1, rotary drive 4), Sindorf et al. discloses that the drive is coupled to the receiving part (Fig. 1, header 3 and footer 2 above and below the filter insert 12) to rotate the receiving part. Sindorf et al. further teaches the receiving part includes a rod-shaped drive part (Fig. 1, axis 10), releasably connected, when Sindorf et al. states, “The backwashing filter shown in Figures 1-4 features an approximately cylindrical filter housing 1 that carries a separably connected base section 2 at the base and a head section 3 that is also separably connected.” Sindorf et al., Translation, ¶ 12, lines 1-3.

9. Regarding the limitation below in bold-faced type –

a drive being coupled to said receiving part to rotate said receiving part, including a rod- shaped drive part releasably connecting said first and second end parts and including a pneumatic motor producing alternating to and fro movements on an output part convertible into a constant drive movement in a drive direction of said drive part by a free wheel device.

The limitation is being interpreted to mean (1) the drive (Fig. 1, drive 34) has a pneumatic motor, as stated in the substitute Specification, p. 4, line 11 – and (2) the drive (Fig. 1, drive 34) is coupled to the free wheel device (Fig. 1, free-wheeling device 56) with a driven part (Fig. 1, driven part 54), in keeping with the Specification’s Fig. 1 and original claim 5.

10. Sindorf et al. discloses the drive (rotary drive 4) has a pneumatic motor when Sindorf et al. states, “The rotary drive 4 in the form of a compressed gas or compressed air motor is

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connected to the same compressed gas or compressed air system 38.” Sindorf et al., ¶ 18, Translation, lines 12-13. In Fig. 1, Sindorf et al. further teaches that the drive (rotary drive 4) is coupled to the free-wheeling device (center part of plate 17 and the coupler between plate 17 and bearing 21) with a driven part (the coupler between plate 17 and bearing 21).

11. Regarding the functional limitation of the pneumatic motor producing alternating to and fro movements while in use, Sindorf et al. labels this the “percussion effect.” Specifically, Sindorf et al. discloses, “In practical applications, a popular choice is backwashing systems with rotary slide valves, in which the backwashing effect is promoted by introducing a compressed gas that usually consists of compressed air and abruptly accelerates the backwashing liquid situated in the filter chamber to be backwashed when a compressed gas valve is opened such that a percussion effect for improving the cleaning efficiency of the backwashing medium is achieved.” Sindorf et al., Translation, ¶ 3, lines 10-14.

12. In summary, Sindorf et al. discloses or suggests all claim 11 limitations.

13. Claims 12 and 14 are shown below in italics with the keyed structure from Table 1 underlined.

Claim 12. A filter device according to claim 11 wherein said free wheel device comprises a free wheel sleeve delivering drive power of said drive to said drive part in one direction up to a set torque and not applying drive torque to said drive part in an opposite direction.

Claim 14. A filter device according to claim 11 wherein said filtered fluid outlet is disposed in a first housing part of said filter housing facing toward said drive; and said

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filter housing including a second housing part being removable from said first housing part, said second housing part having a cavity above said filter elements toward a free end thereof with an axial extension corresponding approximately to an overall length of each said filter element.

14. Regarding claim 12 – The Sindorf et al. drive is at the top of the filter device and appellant's drive is at the bottom of the filter device. In both cases, the drive (appellant's drive 34, Sindorf et al.'s rotary drive 4) is coupled to a free wheel device (appellant's free-wheeling device 56, Sindorf et al.'s coupling plate 13) with the recited sleeve. In both cases, the power of the drive (appellant's free-wheeling device 56, Sindorf et al.'s coupling plate 13) is delivered by the free wheel device with the recited sleeve (appellant's free-wheeling device 56, Sindorf et al.'s coupling plate 13) to the drive part (appellant's driving part 52, Sindorf et al.'s axis 10).

15. To recap, Sindorf et al. discloses the claimed invention except for the drive location (Fig. 1, drive or motor 34) being located at the top, instead of the bottom. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have located the Sindorf et al. drive at the bottom of the filter device, instead of the top – and to have accordingly located the Sindorf et al. free wheel device with a sleeve at the bottom of the filter device instead of the top – thus, meeting all claim 12 limitations – because this is an example of using a known technique (couple a free wheel device to a drive) to improve similar devices (the Sindorf et al. filter device with the drive at the top, the Sindorf et al. filter device with the drive at the bottom) in the same way, (construct a “backwashing filter [that] contains a number of independent filter candle elements seated in a rotating plate so that each element can be moved into an isolated backwash chamber.” Sindorf et al., Abstract, lines 1-2).

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16. Regarding claim 14 – Sindorf et al. states, “The backwashing filter shown in Figures 1-4 features an approximately cylindrical filter housing 1 that carries a separably connected base section 2 at the base and a head section 3 that is also separably connected.” Sindorf et al., Translation, ¶ 12, lines 1-3. As such, the Sindorf et al. fluid outlet is disposed in the first part of the housing (base section 2). The second part of the housing (filter housing 1 excluding base section 2) is removable from the first part of the housing. The second housing part has a cavity above the filter elements (filter inserts 12) and towards the free end of the filter elements. The cavity has an axial extension in the drawings corresponding to less than the recited “overall length of each said filter element.”

17. To recap, Sindorf et al. discloses the claimed invention except that the cavity (Fig. 1, cavity 11) above the filter elements (filter inserts 12) corresponds to less than the recited “overall length of each said filter element.” It would have been obvious to one having ordinary skill in the art at the time the invention was made to have lengthened the Sindorf et al. cavity to the recited “overall length of each said filter element,” since it has been held that if the claimed device and the prior art device do not perform differently, then changing relative dimensions involves only routine skill in the art. *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984). In this case, the Sindorf et al. invention functions as a filter device, with filter elements rotating into and out of an isolated backwash chamber via a rotating plate, whether the cavity is the recited “overall length of each said filter element” or less than that.

18. In summary, Sindorf et al. discloses or suggests all limitations recited in claims 12 and 14.

19. Claim 15 is shown below in italics with the keyed structure from Table 1 underlined.

Claim 15. A filter device according to claim 11 wherein said fluid inlet and said backwash fluid outlet are located in a part of said filter housing extending between said filtered fluid outlet and said drive.

In Fig. 1, Sindorf et al. discloses that the fluid inlet (filter liquid inlet 5) and the backwash fluid outlet (backwashing channel 28) are located in a part of the housing (filter housing 1) extending between the filtered fluid outlet (filtrate outlet 6) and the drive (rotary drive 4).

20. In summary, Sindorf et al. discloses or suggests all claim 15 limitations.

21. Claims 17 and 18 are shown below in italics with the keyed structure from Table 1 underlined.

*Claim 17. A filter device according to claim 11 wherein a lower part of said filter housing comprises an **arcuate-shaped recess** over which several of said filter elements can be located simultaneously in filtration positions thereof with **lower free open cross sections** in fluid communication therewith, said **arcuate-shaped recess** being in fluid communication with said fluid inlet; and said lower part of said filter housing also comprises a **backwash recess** over which said filter elements are sequentially located in said backwashing position with said **free open cross sections** in fluid communication therewith, said **backwash recess** being in fluid communication with said backwash fluid outlet.*

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Claim 18. A filter device according to claim 17 wherein exterior surfaces of said filter elements are in fluid communication with one another allowing filtered fluid from said filter elements in said filtration positions to flow to and through said filter element in said backwashing position as backwashing fluid.

22. Regarding claim 17 – The three terms in bold-faced type were not recited in the prosecution history until after the nonfinal office action. During the final office action, then, the three terms were added to the Table 1 key above. These terms are being interpreted as follows.

- a. The “arcuate-shaped recess” is interpreted to be the “kidney-shaped recess 44.” Substitute Specification, p. 6, lines 23-24; Original Specification, p. 7, lines 1-2.
- b. The “backwash recess” is interpreted to be opening 48. Substitute Specification, p. 7, lines 8-9; Original Specification, p. 7, lines 15-16.
- c. The “lower free open cross section” is interpreted to be the “lower opening cross-section 46.” Substitute Specification, p. 6, lines 24-26; Original Specification, p. 7, lines 2-4.

23. As can be seen from Table 1 above, Sindorf et al. teaches that the lower housing has recesses over which several filter elements (Fig. 1, filter inserts 12) sit during filtration (Fig. 1, recess under filter insert 12 in filtration mode, i.e. disk opening 18) and during backwash (Fig. 1, Fig. 1, recess under filter insert 12 in backwash mode, i.e. disk opening 18). Claim 17 recites a lower free open cross section 46 that corresponds to a filter element inlet. Sindorf et al. teaches such a filter element inlet (Fig. 1, opening between filter insert 12 and disk opening 18). In Figs. 1-5, Sindorf et al. further teaches the filter elements in fluid communication with one another, as recited in claim 18. The remaining limitation recited in claims 17 and 18 is that the flow through

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the filter device is reversed relative to the flow through the Sindorf et al. filter device as disclosed.

24. Sindorf et al. discloses the claimed invention except that the flow is reversed through the filter device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have arranged the Sindorf et al. filter device parts so that flow was reversed through the filter device, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955).

25. In summary, Sindorf et al. discloses or suggests all limitations recited in claims 17 and 18.

26. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindorf et al. (EP0900548A1, Mar. 3, 1999 – Abstract, Patent Publication, Machine Translation) as applied to claim 11 above, in view of Wnuk et al. (U.S. Patent Pub. No. 2003/0213127 A1, Nov. 20, 2003) for the specifics of the filter element.

27. Claim 13 is shown below in italics with the keyed structure from Table 1 underlined.

Claim 13. A filter device according to claim 11 wherein said filter elements are conical and are arranged in pairs opposite one another in each pair relative to said pivot axis, each of said filter elements having an (filter element) inlet opening facing toward said drive.

Claim 16. A filter device according to claim 15 wherein each said filter element comprises a bar screen tube filter element.

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28. Regarding claim 16 – There is no mention of “bar screen tube filter elements” in either the substitute Specification or its original. In the patentability analysis below, claim 16 is being interpreted such that the recited “bar screen tube filter element” means a tubular wedge-wire screen filter element. This has support both from the substitute Specification and its original when it is stated, “The tubular wedge-wire screen filter elements preferably used have support rods tilted in the direction of the longitudinal axis 24 of the device and around which a wire section is wound.” Substitute Specification, p. 8, lines 28-29; Original Specification, p. 9, lines 13-15. Original claim 10 also recites, “The filter device as claimed in claim 1, wherein the respective filter element (28) is formed from a tubular wedge-wire screen filter element.”

29. Regarding claim 13, then – In Fig. 1, Sindorf et al. discloses two pairs of paired filter elements (filter inserts 12), each pair opposite one another relative to the pivot axis (extends longitudinally along axis 10). However, the Sindorf et al. filter elements have an opening facing away from the drive, instead of towards the drive, as recited. As with the claim 12 sleeve location, the filter element opening location is a consequence of the drive being placed at the top of the filter device instead of the bottom. The patentability analysis, then, is analogous.

30. To recap, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have located the Sindorf et al. drive (Fig. 1, rotary 4) at the bottom of the filter device, instead of the top – and to have accordingly located the Sindorf et al. filter element openings (Fig. 1, opening between the filter insert 12 and disk opening 18) facing towards the drive, instead of away from it – thus, meeting all claim 13 limitations. This is an example of using a known technique (couple a free wheel device to a drive) to improve similar devices (the Sindorf et al. filter device with the drive at the top, the Sindorf et al. filter device

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with the drive at the bottom) in the same way, (construct a “backwashing filter [that] contains a number of independent filter candle elements seated in a rotating plate so that each element can be moved into an isolated backwash chamber.” Sindorf et al., Abstract, lines 1-2).

31. Sindorf et al. discloses the claimed invention except for the conical filter elements [claim 13] that are tubular wedge-wire screen filter elements [claim 16]. Wnuk et al. teaches such tubular wedge-wire screen filter elements in Figs. 1-3. Wnuk et al. further teaches, “The present invention relates to a process for production of conical or frustoconical filter elements, slotted tube filter elements in particular. The support structure of the filter element is formed of a plurality of support rods around which at least one wire profile is wound in individual turns. Slots are left clear in the wire profile through which a fluid may pass.” Wnuk et al., ¶ 1, lines 1-7. Wnuk et al. discloses that such a filter element “is simple and cost-effective and which achieves improved filtration results” because “the overall structure is very rigid and the filter screen is more or less self-supporting to increase the overall stability of the filter element.” Wnuk et al., ¶ 5, lines 2-5 and ¶ 8, lines 1-4. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the Sindorf et al. filter element a conical [claim 13], wedge-wire screen filter element [claim 16] as taught by Wnuk et al., since Wnuk et al. states at ¶ 5, lines 2-5 and ¶ 8, lines 1-4, that such a modification would produce a filter element that “is simple and cost-effective and which achieves improved filtration results” because “the overall structure is very rigid and the filter screen is more or less self-supporting to increase the overall stability of the filter element.”
32. In summary, Sindorf et al., in view of Wnuk for the specifics of the filter element, discloses or suggests all limitations recited in claims 13 and 16.

Claim Rejections - 35 USC § 103
Filter Device Recited in Claims 19-25

33. Claims 19, 20, 22, 23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindorf et al. (EP0900548A1, Mar. 3, 1999 – Abstract, Patent Publication, Translation).

34. Claims 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindorf et al. (EP0900548A1, Mar. 3, 1999 – Abstract, Patent Publication, Machine Translation) as applied to claim 11 above, in view of Wnuk (U.S. Patent Pub. No. 2003/0213127 A1, Nov. 20, 2003) for the specifics of the filter element.

35. Appellant recited the same limitations in claims 19-25 that were recited in claims 11-19 but arranged differently. From the patentability analysis above:

- a. Claims 11, 12, 14, 15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindorf et al. (EP0900548A1, Mar. 3, 1999 – Abstract, Patent Publication, Translation).
- b. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sindorf et al. (EP0900548A1, Mar. 3, 1999 – Abstract, Patent Publication, Machine Translation) as applied to claim 11 above, in view of Wnuk (U.S. Patent Pub. No. 2003/0213127 A1, Nov. 20, 2003) for the specifics of the filter element.

Table 2 below keys the limitations in claims 19-25 to those of claims 11-19 and the consequent rejection.

Table 2: Claims 19-25 limitations keys to those of claims 11-18, and consequent rejections.		
<i>Claim number</i>	<i>Keyed to previous claims.</i>	<i>Consequent rejection.</i>
19	Claims 11 and 17.	35 U.S.C. 103(a) over Sindorf et al.
20	Claims 19 and 12.	35 U.S.C. 103(a) over Sindorf et al.
21	Claims 19 and 13.	35 U.S.C. 103(a) over Sindorf et al., in view of Wnuk.
22	Claims 19 and 14.	35 U.S.C. 103(a) over Sindorf et al.

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23	Claims 19 and 15.	35 U.S.C. 103(a) over Sindorf et al.
24	Claims 19 and 16.	35 U.S.C. 103(a) over Sindorf et al., in view of Wnuk.
25	Claims 19 and 18.	35 U.S.C. 103(a) over Sindorf et al.

36. In summary, Sindorf et al. discloses or suggests all limitations recited in claims 19, 20, 22, 23, and 25. Sindorf et al., in view of Wnuk for the specifics of the filter element, discloses or suggests all limitations recited in claims 21 and 24.

37. In Table 3 below, claims 19-25 are shown alongside their respective claims 11-18. The claimed structure is underlined in both sets of claims. The underlined structure is keyed to that of the prior art in Table 2 above.

Table 3: Claims 19-25 shown alongside their respective claims 11-18 which were already analyzed for patentability above.	
<i>Claims 19-25</i>	<i>Respective claims 11-18</i>
<p><i>Claim 19. A filter device, comprising:</i> <i>a filter housing having an unfiltered <u>fluid inlet</u>, a <u>filtered fluid outlet</u> and a <u>backwash fluid outlet</u>;</i> <i><u>filter elements</u> in said housing receiving fluid flow in one direction for filtration and in an opposite direction for backwashing effective filter surfaces thereof;</i> <i>a <u>pivoting device</u> mounting said <u>filter elements</u> in said filter <u>housing</u> for sequential rotational movement about a <u>pivot axis</u> between filtration positions in which unfiltered fluid flows from inside to outside through said <u>filter elements</u> and a backwashing position in which filtered fluid flows from outside to inside through said <u>filter elements</u>, said <u>pivot(ing) device</u> having a rotatably mounted <u>receiving part</u> mounting said <u>filter elements</u> parallel to said <u>pivot axis</u> along a path coaxial to said <u>pivot axis</u> and having first and second <u>end parts</u>, said <u>filter elements</u> extending between said <u>end parts</u>, said <u>first end part</u> facing toward said <u>fluid inlet</u> and rotatably guided along an inside of said filter <u>housing</u> by a <u>seal</u>;</i> <i>a <u>drive</u> being coupled to said <u>receiving part</u> to rotate said <u>receiving part</u>; and</i></p> <p><i>a lower part of said filter <u>housing</u> having an <u>arcuate-shaped recess</u> over which several of said</i></p>	<p><i>Claim 11. A filter device, comprising:</i> <i>a filter <u>housing</u> having an unfiltered <u>fluid inlet</u>, a <u>filtered fluid outlet</u> and a <u>backwash fluid outlet</u>;</i> <i><u>filter elements</u> in said housing receiving fluid flow in one direction for filtration and in an opposite direction for backwashing effective filter surfaces thereof;</i> <i>a <u>pivoting device</u> mounting said <u>filter elements</u> in said filter <u>housing</u> for sequential rotational movement about a <u>pivot axis</u> between filtration positions in which unfiltered fluid flows from inside to outside through said <u>filter elements</u> and a backwashing position in which filtered fluid flows from outside to inside through said <u>filter elements</u>, said <u>pivot(ing) device</u> having a rotatably mounted <u>receiving part</u> mounting said <u>filter elements</u> parallel to said <u>pivot axis</u> along a path coaxial to said <u>pivot axis</u> and having first and second <u>end parts</u>, said <u>filter elements</u> extending between said <u>end parts</u>, said <u>first end part</u> facing toward said <u>fluid inlet</u> and rotatably guided along an inside of said filter <u>housing</u> by a <u>seal</u>; and</i> <i>a <u>drive</u> being coupled to said <u>receiving part</u> to rotate said <u>receiving part</u>. . .</i></p> <p><i>Claim 17. A <u>filter device</u> according to claim 11 wherein</i> <i>a lower part of said filter <u>housing</u> comprises an <u>arcuate-shaped recess</u> over which several of</i></p>

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<p><u>filter elements</u> can be located simultaneously in filtration positions thereof with lower free open cross sections in fluid communication therewith and having a backwash recess over which said <u>filter elements</u> are sequentially located in said backwashing position with said free open cross sections in fluid communication therewith, said arcuate-shaped recess being in fluid communication with said <u>fluid inlet</u>, said backwash recess being in fluid communication with said <u>backwash fluid outlet</u>.</p>	<p>said <u>filter elements</u> can be located simultaneously in filtration positions thereof with lower free open cross sections in fluid communication therewith, said arcuate-shaped recess being in fluid communication with said <u>fluid inlet</u>; and said lower part of said filter <u>housing</u> also comprises a backwash recess over which said <u>filter elements</u> are sequentially located in said backwashing position with said free open cross sections in fluid communication therewith, said backwash recess being in fluid communication with said <u>backwash fluid outlet</u>.</p> <p>Claim 11 (cont.) . . . (a drive being coupled to said receiving part to rotate said receiving part) including a rod-shaped <u>drive part</u> releasably connecting said first and second <u>end parts</u> and including a pneumatic motor producing alternating to and fro movements on an output part convertible into a constant drive movement in a drive direction of said drive part by a <u>free wheel device</u>.</p>
<p>Claim 20. A <u>filter device</u> according to claim 19 wherein said <u>free wheel device</u> comprises a free wheel sleeve delivering drive power of said <u>drive</u> to said <u>drive part</u> in one direction up to a set torque and not applying drive torque to said <u>drive part</u> in an opposite direction.</p>	<p>Claim 12. A <u>filter device</u> according to claim 11 wherein said <u>free wheel device</u> comprises a free wheel sleeve delivering drive power of said <u>drive</u> to said <u>drive part</u> in one direction up to a set torque and not applying drive torque to said <u>drive part</u> in an opposite direction.</p>
<p>Claim 21. A <u>filter device</u> according to claim 19 wherein said <u>filter elements</u> are conical and are arranged in pairs opposite one another in each pair relative to said <u>pivot axis</u>, each of said <u>filter elements</u> having an (<u>filter element</u>) <u>inlet opening</u> facing toward said <u>drive</u>.</p>	<p>Claim 13. A <u>filter device</u> according to claim 11 wherein said <u>filter elements</u> are conical and are arranged in pairs opposite one another in each pair relative to said <u>pivot axis</u>, each of said <u>filter elements</u> having an (<u>filter element</u>) <u>inlet opening</u> facing toward said <u>drive</u>.</p>
<p>Claim 22. A <u>filter device</u> according to claim 19 wherein said <u>filtered fluid outlet</u> is disposed in a first housing part of said filter <u>housing</u> facing toward said <u>drive</u>; and said filter housing including a second housing part being removable from said first housing part, said second housing part having a <u>cavity</u> above said <u>filter elements</u> toward a free end thereof with an axial extension corresponding approximately to an overall length of each said <u>filter element</u>.</p>	<p>Claim 14. A <u>filter device</u> according to claim 11 wherein said <u>filtered fluid outlet</u> is disposed in a first housing part of said filter <u>housing</u> facing toward said <u>drive</u>; and said filter housing including a second housing part being removable from said first housing part, said second housing part having a <u>cavity</u> above said <u>filter elements</u> toward a free end thereof with an axial extension corresponding approximately to an overall length of each said <u>filter element</u>.</p>
<p>Claim 23. A <u>filter device</u> according to claim 19 wherein said <u>fluid inlet</u> and said <u>backwash fluid outlet</u> are located in a part of said filter <u>housing</u> extending between said <u>filtered (fluid) outlet</u> and said <u>drive</u>.</p>	<p>Claim 15. A <u>filter device</u> according to claim 11 wherein said <u>fluid inlet</u> and said <u>backwash fluid outlet</u> are located in a part of said filter <u>housing</u> extending between said <u>filtered fluid outlet</u> and said <u>drive</u>.</p>
<p>Claim 24. A <u>filter device</u> according to claim 22 wherein each said <u>filter element</u> comprises a bar screen tube <u>filter element</u>.</p>	<p>Claim 16. A <u>filter device</u> according to claim 15 wherein each said <u>filter element</u> comprises a bar screen tube <u>filter element</u>.</p>

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Claim 25. A filter device according to claim 19 wherein exterior surfaces of said filter elements are in fluid communication with one another allowing filtered fluid from said filter elements in said filtration positions to flow to and through said filter element in said backwashing position as backwashing fluid.

Claim 18. A filter device according to claim 17 wherein exterior surfaces of said filter elements are in fluid communication with one another allowing filtered fluid from said filter elements in said filtration positions to flow to and through said filter element in said backwashing position as backwashing fluid.

(10) Response to Argument

1. Arguments filed August 12, 2009 have been fully considered but they are not persuasive.
2. The claimed invention is a backwashing filter device that contains a number of filter elements seated in a pivoting device, so that each filter element can be rotated into an isolated backwash position and cleaned while the remaining filter elements continue in service.

Appellant's basic argument is that the claimed invention is distinguishable over the prior art because (1) appellant's filter device is an inside-out filter and the prior art's device is an outside-in filter and (2) appellant's drive has been located at the bottom of the device and the prior art's drive is located at the top of the device. As such, appellant argues that structural differences result that are patentable. Most of the remaining arguments flow from there.
3. Regarding the reverse flow through the filter device, the claims were examined under the guidance of MPEP 2144.04 (VI-A), as shown below.

VI. REVERSAL, DUPLICATION, OR REAR-RANGEMENT OF PARTS

A. Reversal of Parts

In re Gazda, 219 F.2d 449, 104 USPQ 400 (CCPA 1955) (Prior art disclosed a clock fixed to the stationary steering wheel column of an automobile while the gear for winding the clock moves with steering wheel; mere reversal of such movement, so the clock moves with wheel, was held to be an obvious expedient.). MPEP 2144.04 (VI-A).

4. In this case, Sindorf et al. discloses the claimed apparatus except that the flow is reversed through the filter device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have arranged the Sindorf et al. filter device parts so that flow was reversed through the filter device, since it has been held that a mere reversal of the essential

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working parts of a device involves only routine skill in the art. *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955).

5. Regarding the drive being located at the top of the device instead of the bottom of the device, the claims were examined under the guidance of MPEP 2143 in light of *KSR*

International. The relevant sections follow.

2143 Examples of Basic Requirements of a Prima Facie Case of Obviousness

The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper “functional approach” to the determination of obviousness as laid down in *Graham*. The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit.

* * *

B. Simple Substitution of One Known Element for Another To Obtain Predictable Results

To reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Then, Office personnel must articulate the following:

- (1) a finding that the prior art contained a device (method, product, etc.) which differed from the claimed device by the substitution of some components (step, element, etc.) with other components;
- (2) a finding that the substituted components and their functions were known in the art;
- (3) a finding that one of ordinary skill in the art could have substituted one known element for another, and the results of the substitution would have been predictable; and
- (4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

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The rationale to support a conclusion that the claim would have been obvious is that the substitution of one known element for another yields predictable results to one of ordinary skill in the art. If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art.

6. In this case, Sindorf et al. discloses the claimed invention except for the drive location (Fig. 1, drive or motor 34) being located at the top, instead of the bottom. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have located the Sindorf et al. drive at the bottom of the filter device, instead of the top, because this is an example of using a known technique (couple a free wheel device to a drive) to improve similar devices (the Sindorf et al. filter device with the drive at the top, the Sindorf et al. filter device with the drive at the bottom) in the same way, (construct a “backwashing filter [that] contains a number of independent filter candle elements seated in a rotating plate so that each element can be moved into an isolated backwash chamber.” Sindorf et al., Abstract, lines 1-2).

7. Appellant’s specific arguments are listed below with the examiner’s response after each argument.

- a. Regarding claim 11 and the withdrawn indefiniteness rejection, appellant argues, “The drive part of claim 11 can only be drive part 52 since that part is the only feature described in the specification as the drive part and since it is the only part described and illustrated connecting the first and second end parts 40 and 38. Driven part 54 does not connect those end parts, and thus, cannot constitute the recited ‘drive part’ of claim 11. Since the only part described and illustrated in this application on which the pneumatic motor 34 produces alternating to and from movement is the driven part 54, only that driven part 54 can constitute or correspond to the ‘output part’ recited in claim 11.”

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Appeal Brief, p. 5, line 23 to p. 6, line 5. Appellant further argues, “Here the meaning of ‘output part’ as well as the remaining language of claim 11 is clearly discernible to one of ordinary skill in the art when properly construed and interpreted in light of the drawings and descriptive portion of the specification. Since the claim meaning is discernible to one of ordinary skill in the art, the claim is not indefinite. *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1366, 77 USPQ2d 1081, 1089 (Fed. Cir. 2004).” Appeal Brief, p. 6, lines 12-16.

The limitation under discussion follows with the bold-faced type indicating the cause of the indefiniteness rejection, which is now withdrawn.

Claim 11 . . .

*a drive being coupled to said receiving part to rotate said receiving part,
including a rod- shaped drive part releasably connecting said first and second
end parts and including a **pneumatic motor producing alternating to and fro
movements on an output part convertible into a constant drive movement in
a drive direction of said drive part by a free wheel device.***

Original claim 5, upon which the claim 11 limitation is based, is shown below.

*Original claim 5. The filter device as claimed in claim 4, wherein the drive part (52) can be driven by a **drive part (34), especially in the form of a pneumatic motor, with alternating back and forth motion for its driven part (54) which can be converted by means of a free-wheeling device (56) into a constant drive motion in one driving direction for the drive part (52) of the receiving element (32).***

The examiner responds as in the above patentability analysis. The limitation was interpreted to mean (1) the drive (Fig. 1, drive 34) has a pneumatic motor, as stated in the substitute Specification, p. 4, line 11 – and (2) the drive (Fig. 1, drive 34) is coupled to the free wheel device (Fig. 1, free-wheeling device 56) with a driven part (Fig. 1, driven part 54), in keeping with the Specification's Fig. 1 and original claim 5.

Sindorf et al. discloses the drive (rotary drive 4) has a pneumatic motor when Sindorf et al. states, "The rotary drive 4 in the form of a compressed gas or compressed air motor is connected to the same compressed gas or compressed air system 38." Sindorf et al., ¶ 18, Translation, lines 12-13. In Fig. 1, Sindorf et al. further teaches that the drive (rotary drive 4) is coupled to the free-wheeling device (center part of plate 17 and the coupler between plate 17 and bearing 21) with a driven part (the coupler between plate 17 and bearing 21).

Regarding the functional limitation of the pneumatic motor producing alternating to and fro movements while in use, Sindorf et al. labels this the "percussion effect." Specifically, Sindorf et al. discloses, "In practical applications, a popular choice is backwashing systems with rotary slide valves, in which the backwashing effect is promoted by introducing a compressed gas that usually consists of compressed air and abruptly accelerates the backwashing liquid situated in the filter chamber to be backwashed when a compressed gas valve is opened such that a percussion effect for improving the cleaning efficiency of the backwashing medium is achieved." Sindorf et al., Translation, ¶ 3, lines 10-14.

In summary, Sindorf et al. discloses or suggests all claim 11 limitations.

- b. Regarding claims 16 and 24 and the withdrawn indefiniteness rejection for the term “bar screen tube filter element,” appellant argues, “[T]he original specification and substitute specification disclose that the ‘tubular wedge-wire screen filter elements preferably used have support rods . . .’” and cites to the substitute Specification at p. 8, line 25. Appeal Brief, p. 6, lines 20-22. Appellant continues, “From this description one of ordinary skill in the art would readily discern the claim language of ‘a bar screen tube filter element’ as a screen filter element with support bars or rods such that the term is not indefinite.” Appeal Brief, p. 6, line 22 to p. 7, line 2.

The limitation under discussion follows with the bold-faced type indicating the cause of the indefiniteness rejection, which is now withdrawn.

*Claim 16. A filter device according to claim 15 wherein each said filter element comprises a **bar screen tube filter element**.*

*Claim 24. A filter device according to claim 22 wherein each said filter element comprises a **bar screen tube filter element**.*

The examiner responds as in the above patentability analysis. There is no mention of “bar screen tube filter elements” in either the substitute Specification or its original. As such, the limitation was interpreted to mean the filter element is a tubular wedge-wire screen filter element. This has support both from the substitute Specification and its original when it is stated, “The tubular wedge-wire screen filter elements preferably used have support rods tilted in the direction of the longitudinal axis 24 of the device and around which a wire section is wound.” Substitute Specification, p. 8, lines 28-29;

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Original Specification, p. 9, lines 13-15. Original claim 10 also recites, “The filter device as claimed in claim 1, wherein the respective filter element (28) is formed from a tubular wedge-wire screen filter element.”

Given the above interpretation, Sindorf et al. discloses the claimed invention except for the tubular wedge-wire screen filter elements. Wnuk et al. teaches such tubular wedge-wire screen filter elements in Figs. 1-3. Wnuk et al. further provides motivation to have constructed the Sindorf et al. filter element as a wedge-wire screen filter element when Wnuk et al, states at ¶ 5, lines 2-5 and ¶ 8, lines 1-4, that such a modification would produce a filter element that “is simple and cost-effective and which achieves improved filtration results” because “the overall structure is very rigid and the filter screen is more or less self-supporting to increase the overall stability of the filter element.”

- c. Regarding claim 11, appellant argues that when flow is reversed through the filter device, the apparatus structure is changed in a non-obvious, patentable manner. Appeal Brief, p. 7, lines 17-18.

- (i) Appellant argues, “[T]he claimed structure provides the reverse flow allowing use of the filtered fluid for the backwashing rather than a separate fluid as in the Sindorf device so that significantly more than a mere reversal of parts is involved in the proposed modification.” Appeal Brief, p. 7, lines 18-21. Appellant further notes that Sindorf et al. backwashes with compressed air. Appeal Brief, p. 9, lines 1-2.

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(ii) Appellant argues, “This reversal is not obvious, as alleged, and involves structural differences” and, in particular, “the backwash position with the filter elements necessarily exposed to the filtered fluid in the housing for the recited flow.”

Appeal Brief, p. 7, lines 22-24.

Appellant makes similar arguments for claims 17 and 19. Appeal Brief, p. 10, lines 12-13; p. 10, line 21 to p. 11, line 5; p. 10, lines 16-18.

The examiner responds as in the above patentability analysis. Sindorf et al. discloses the claimed invention except that the flow is reversed through the filter device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have arranged the Sindorf et al. filter device parts so that flow was reversed through the filter device, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955).

Regarding whether a backwash fluid is just filtered fluid or is both filtered fluid and compressed air does not enter into this patentability analysis because these are apparatus claims. MPEP 2115 [R-2] states that a material worked upon does not limit the apparatus claims. The cited case law follows. “Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim.” *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969).

Furthermore, “[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims.” *In re Young*, 75 F.2d, 25 USPQ 69 (CCPA

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1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). As such, what the backwash fluid is does not enter into this patentability analysis.

Turning now to the argument that “This reversal is not obvious, as alleged, and involves structural differences” and, in particular, “the backwash position with the filter elements necessarily exposed to the filtered fluid in the housing for the recited flow.” Appeal Brief, p. 7, lines 22-24. The examiner responds as in the above patentability analysis. Sindorf et al. discloses or suggests all claim 11 limitations.

- d. Regarding claim 11, appellant argues, “[C]laim 11 requires a drive part releasably connecting the end parts of the pivoting device” and the Sindorf filter housing 1 and its base section 2 forms a releasable connection that “is not part of a drive part connecting the ends of a pivoting device as claimed.” Appeal Brief, p. 8, lines 4-8. Appellant further explains, “The Sindorf drive arrangement does not rotate a receiving part holding the filter element where the drive includes a rod-shaped drive part releasably connecting the first and second end parts and with a free wheel device. The longitudinal axis 10 referenced is not part of the Sindorf drive and does not provide a releasable connection.” Appeal Brief, p. 8, lines 18-21.

The limitation under discussion follows.

Claim 11 . . .

*a drive being coupled to said receiving part to rotate said receiving part,
including a rod- shaped drive part releasably connecting said first and
second end parts . . .*

The examiner responds as in the above patentability analysis. The relevant portions of Table 1 are shown below.

Table 1: Keying claimed structure to that of the prior art.		
<i>Claimed Structure in Original Specification</i>	<i>Claimed Structure in Substitute Specification</i>	<i>Prior Art.</i>
<i>Pivoting device</i> (30).	<i>Pivoting device</i> – Fig. 1, pivoting device 30.	<i>Pivoting device</i> – Sindorf et al., Fig. 1, base section 2 and head section 3.
<i>Receiving element</i> (32).	<i>Receiving part</i> – Fig. 1, receiving element 32.	<i>Receiving part</i> – Sindorf et al., Fig. 1, head section 3 and base section 2 above and below the filter insert 12.
<i>End parts</i> (38, 40).	<i>End parts</i> – Fig. 1, end parts 38, 40.	<i>End parts</i> – Sindorf et al., Fig. 1, head 3 and footer 2 that are just above and just below the filter insert 12.
<i>Drive part</i> (52).	<i>Drive part</i> – Fig. 1, rod-like drive part 52.	<i>Drive part</i> – Sindorf et al., Fig. 1, axis 10.
<i>Drive</i> (34).	<i>Drive</i> – Fig. 1, drive or motor 34.	<i>Drive</i> – Sindorf et al., Fig. 1, rotary drive 4.

Regarding the drive (Fig. 1, rotary drive 4), Sindorf et al. discloses that the drive is coupled to the receiving part (Fig. 1, header 3 and footer 2 above and below the filter insert 12) to rotate the receiving part. Sindorf et al. further teaches the receiving part includes a rod-shaped drive part (Fig. 1, axis 10), releasably connected, when Sindorf et al. states, “The backwashing filter shown in Figures 1-4 features an approximately cylindrical filter housing 1 that carries a separably connected base section 2 at the base and a head section 3 that is also separably connected.” Sindorf et al., Translation, ¶ 12, lines 1-3. The relevant portions of Table 1 are shown below.

- e. Regarding claim 11, appellant argues, “Claim 11 is also distinguishable by the first end part facing the inlet and rotatably guided from the inside surface of the filter housing by a seal. The Sindorf header 3 and footer 2, alleged to correspond to the claimed end parts, do not have one thereof (particularly bearing surface 20) facing its unfiltered fluid inlet 5

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and do not have the filter element extending between them.” Appeal Brief, p. 9, lines 3-

7. Appellant makes a similar argument for claim 19. Appeal Brief, p. 11, lines 19-22.

The limitation under discussion follows.

Claim 11 . . .

*said filter elements extending between said end parts, said first end part
facing toward said fluid inlet and rotatably guided along an inside of said
filter housing by a seal; . . .*

The examiner responds as in the above patentability analysis. The relevant part of Table 1 appears below.

Table 1: Keying claimed structure to that of the prior art.		
<i>Claimed Structure in Original Specification</i>	<i>Claimed Structure in Substitute Specification</i>	<i>Prior Art.</i>
<i>Filter elements</i> (28).	<i>Filter elements</i> – Fig. 1, filter elements 28.	<i>Filter elements</i> – Sindorf et al., Fig. 1, filter insert 12.
<i>Filter housing</i> (10).	<i>Housing</i> – Fig. 1, filter housing 10.	<i>Housing</i> – Sindorf et al., Fig. 1, filter housing 1.
<i>Filter inlet</i> (20).	<i>Fluid inlet</i> – Fig. 1, filter inlet 20.	<i>Fluid inlet</i> – Sindorf et al., Fig. 1, filter liquid inlet 5.
<i>Pivoting device</i> (30).	<i>Pivoting device</i> – Fig. 1, pivoting device 30.	<i>Pivoting device</i> – Sindorf et al., Fig. 1, base section 2 and head section 3.
<i>Receiving element</i> (32).	<i>Receiving part</i> – Fig. 1, receiving element 32.	<i>Receiving part</i> – Sindorf et al., Fig. 1, head section 3 and base section 2 above and below the filter insert 12.
<i>End parts</i> (38, 40).	<i>End parts</i> – Fig. 1, end parts 38, 40.	<i>End parts</i> – Sindorf et al., Fig. 1, head 3 and footer 2 that are just above and just below the filter insert 12.
<i>Sealing means</i> (42).	<i>Seal</i> – Fig. 1, sealing means or seal 42.	<i>Seal</i> – Sindorf et al., Fig. 1, “peripheral seal in a cylindrical bearing face 20 of the filter housing 1,” Translation, ¶ 14, line 7.

Sindorf et al., discloses that the pivot device has a rotatably mounted receiving part (Fig. 1, header 3 and footer 2 above and below the filter insert 12) that mounts the filter elements (Fig. 1, filter inserts 12) parallel to and along a path coaxial with the pivot axis (Fig. 1, extends longitudinally along axis 10). Referring to Fig. 1, Sindorf et al. further

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teaches, “On its outer circumference, the circular perforated plate 17 is rotatably supported in a cylindrical bearing surface 20 of the filter housing 1 by means of a peripheral seal.” Sindorf et al., Translation, ¶ 14, lines 7-8. This meets the limitation that the receiving part’s first end (Fig. 1, base section 2 just below the filter insert 12) face toward the fluid inlet (Fig. 1, filter liquid inlet 5) and that at the first end, the filter elements (Fig. 1, filter inserts 12) be rotatably guided along an inside of the filter housing (Fig. 1, filter housing 1) by a seal (“peripheral seal in a cylindrical bearing face 20 of the filter housing 1,” Translation, ¶ 14, line 7).

- f. Regarding claim 12, appellant argues, “Claim 12 is further distinguishable by the free wheel device having a free wheel sleeve delivering power in one direction up to a set torque and not applying drive torque in an opposite direction.” Appeal Brief, p. 9, lines 15-17. Appellant makes a similar argument for claim 20. Appeal Brief, p. 12, lines 15-17.

Claims 12 and 20 follow.

Claim 12. A filter device according to claim 11 wherein said free wheel device comprises a free wheel sleeve delivering drive power of said drive to said drive part in one direction up to a set torque and not applying drive torque to said drive part in an opposite direction.

Claim 20. A filter device according to claim 19 wherein

said free wheel device comprises a free wheel sleeve delivering drive power of said drive to said drive part in one direction up to a set torque and not applying drive torque to said drive part in an opposite direction.

The examiner responds as in the above patentability analysis. The relevant part of Table 1 appears below.

Table 1: Keying claimed structure to that of the prior art.		
<i>Claimed Structure in Original Specification</i>	<i>Claimed Structure in Substitute Specification</i>	<i>Prior Art</i>
<i>Filter device</i> , Fig. 1.	<i>Filter device</i> , Fig. 1.	<i>Filter device</i> – Sindorf et al., Fig. 1.
<i>Pivoting device</i> (30).	<i>Pivoting device</i> – Fig. 1, pivoting device 30.	<i>Pivoting device</i> – Sindorf et al., Fig. 1, base section 2 and head section 3.
<i>Pivoting axis</i> (36).	<i>Pivot axis</i> – Fig. 1, pivoting axis 36.	<i>Pivot axis</i> – Sindorf et al., Fig. 1, extends longitudinally along axis 10.
<i>Receiving element</i> (32).	<i>Receiving part</i> – Fig. 1, receiving element 32.	<i>Receiving part</i> – Sindorf et al., Fig. 1, head section 3 and base section 2 above and below the filter insert 12.
<i>End parts</i> (38, 40).	<i>End parts</i> – Fig. 1, end parts 38, 40.	<i>End parts</i> – Sindorf et al., Fig. 1, head 3 and footer 2 that are just above and just below the filter insert 12.
<i>Drive part</i> (52).	<i>Drive part</i> – Fig. 1, rod-like drive part 52.	<i>Drive part</i> – Sindorf et al., Fig. 1, axis 10.
<i>Free-wheeling device</i> (56).	<i>Free-wheel device</i> – Fig. 1, free-wheeling means 56 with free-wheeling sleeve 56a.	<i>Free-wheel device</i> – Sindorf et al., Fig. 1, center part of plate 17 and the coupler between plate 17 and bearing 21.
<i>Drive</i> (34).	<i>Drive</i> – Fig. 1, drive or motor 34.	<i>Drive</i> – Sindorf et al., Fig. 1, rotary drive 4.
<i>Driven part</i> (54).	<i>Driven part</i> – Fig. 1, driven part 54.	<i>Driven part</i> – Sindorf et al., Fig. 1, the coupler between plate 17 and bearing 21.

The Sindorf et al. drive is at the top of the filter device and appellant's drive is at the bottom of the filter device. In both cases, the drive (appellant's drive 34, Sindorf et al.'s rotary drive 4) is coupled to a free wheel device (appellant's free-wheeling device 56, Sindorf et al.'s coupling plate 13) with the recited sleeve. In both cases, the power of the drive (appellant's free-wheeling device 56, Sindorf et al.'s coupling plate 13) is delivered by the free wheel device with the recited sleeve (appellant's free-wheeling device 56,

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Sindorf et al.'s coupling plate 13) to the drive part (appellant's driving part 52, Sindorf et al.'s axis 10).

Regarding the recited “*delivering drive power of said drive to said drive part in one direction up to a set torque and not applying drive torque to said drive part in an opposite direction*” limitation that appellant argues is not met – Sindorf et al. discloses this, as stated in the claim 11 patentability analysis. Regarding the functional limitation of the pneumatic motor producing alternating to and fro movements while in use, Sindorf et al. labels this the “percussion effect.” Specifically, Sindorf et al. discloses, “In practical applications, a popular choice is backwashing systems with rotary slide valves, in which the backwashing effect is promoted by introducing a compressed gas that usually consists of compressed air and abruptly accelerates the backwashing liquid situated in the filter chamber to be backwashed when a compressed gas valve is opened such that a percussion effect for improving the cleaning efficiency of the backwashing medium is achieved.” Sindorf et al., Translation, ¶ 3, lines 10-14.

To recap, Sindorf et al. discloses the claimed invention except for the drive location (Fig. 1, drive or motor 34). However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have located the Sindorf et al. drive at the bottom of the filter device, instead of the top – and to have accordingly located the Sindorf et al. free wheel device with a sleeve at the bottom of the filter device instead of the top – thus, meeting all claim 12 limitations – because this is an example of using a known technique (couple a free wheel device to a drive) to improve similar devices (the Sindorf et al. filter device with the drive at the top, the Sindorf et al. filter device with the

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drive at the bottom) in the same way, (construct a “backwashing filter [that] contains a number of independent filter candle elements seated in a rotating plate so that each element can be moved into an isolated backwash chamber.” Sindorf et al., Abstract, lines 1-2.

- g. Regarding claim 14, appellant argues, “Claim 14 is further distinguishable by the second housing part having a cavity with an axial extension corresponding to the overall length of each filter element and being above the filter elements. No such cavity is disclosed.” Appeal Brief, p. 10, lines 1-3. Appellant makes a similar argument for claim 22. Appeal Brief, p. 13, lines 2-4.

The limitation under discussion follows.

Claim 14 . . .

said second housing part having a cavity above said filter elements toward a free end thereof with an axial extension corresponding approximately to an overall length of each said filter element.

The examiner responds as in the above patentability analysis. The relevant part of Table 1 appears below.

Table 1: Keying claimed structure to that of the prior art.		
<i>Claimed Structure in Original Specification</i>	<i>Claimed Structure in Substitute Specification</i>	<i>Prior Art.</i>
<i>Filter elements</i> (28).	<i>Filter elements</i> – Fig. 1, filter elements 28.	<i>Filter elements</i> – Sindorf et al., Fig. 1, filter insert 12.
<i>Filter housing</i> (10).	<i>Housing</i> – Fig. 1, filter housing 10.	<i>Housing</i> – Sindorf et al., Fig. 1, filter housing 1.
<i>Cavity</i> (60).	<i>Cavity</i> – Fig. 1, cavity 60.	<i>Cavity</i> – Sindorf et al., Fig. 1, chamber 11.

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In Fig. 1, Sindorf et al. discloses that the second part of the housing (filter housing 1 excluding base section 2) has a cavity above the filter elements (filter inserts 12) and towards the free end of the filter elements.

As such, Sindorf et al. discloses the claimed invention except that the cavity (Fig. 1, cavity 11) above the filter elements (filter inserts 12) corresponds to less than the recited “overall length of each said filter element.” It would have been obvious to one having ordinary skill in the art at the time the invention was made to have lengthened the Sindorf et al. cavity to the recited “overall length of each said filter element,” since it has been held that if the claimed device and the prior art device do not perform differently, then changing relative dimensions involves only routine skill in the art. *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984). In this case, the Sindorf et al. invention functions as a filter device, with filter elements rotating into and out of an isolated backwash chamber via a rotating plate, whether the cavity is the recited “overall length of each said filter element” or less than that.

- h. Regarding claim 15, appellant argues, “[T]he Sindorf fluid inlet 5 and backwash outlet 8 are not between its outlet 6 and drive 4” because “the Sindorf drive is located at the top of the filter housing remote from the fluid inlet 5 and the backwash outlet 8.” Appeal Brief, p. 10, lines 8-10. Appellant makes a similar argument for claim 23. Appeal Brief, p. 13, lines 8-10.

Claims 15 and 23 follow.

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Claim 15. A filter device according to claim 11 wherein said fluid inlet and said backwash fluid outlet are located in a part of said filter housing extending between said filtered fluid outlet and said drive.

Claim 23. A filter device according to claim 19 wherein said fluid inlet and said backwash fluid outlet are located in a part of said filter housing extending between said filtered (fluid) outlet and said drive.

The examiner responds as in the above patentability analysis. The relevant part of Table 1 appears below.

Table 1: Keying claimed structure to that of the prior art.		
<i>Claimed Structure in Original Specification</i>	<i>Claimed Structure in Substitute Specification</i>	<i>Prior Art</i>
<i>Filter device</i> , Fig. 1.	<i>Filter device</i> , Fig. 1.	<i>Filter device</i> – Sindorf et al., Fig. 1.
<i>Filter housing</i> (10).	<i>Housing</i> – Fig. 1, filter housing 10.	<i>Housing</i> – Sindorf et al., Fig. 1, filter housing 1.
<i>Filter inlet</i> (20).	<i>Fluid inlet</i> – Fig. 1, filter inlet 20.	<i>Fluid inlet</i> – Sindorf et al., Fig. 1, filter liquid inlet 5.
<i>Filter outlet</i> (22).	<i>Fluid outlet</i> – Fig. 1, filter outlet 22.	<i>Fluid outlet</i> – Sindorf et al., Fig. 1, filtrate outlet 6.
<i>Fluid outlet</i> (26).	<i>Backwash fluid outlet</i> – Fig. 1, fluid outlet (26).	<i>Backwash fluid outlet</i> – Sindorf et al., Fig. 1, back washing channel 28.
<i>Pivoting device</i> (30).	<i>Pivoting device</i> – Fig. 1, pivoting device 30.	<i>Pivoting device</i> – Sindorf et al., Fig. 1, base section 2 and head section 3.
<i>Drive</i> (34).	<i>Drive</i> – Fig. 1, drive or motor 34.	<i>Drive</i> – Sindorf et al., Fig. 1, rotary drive 4.

In Fig. 1, Sindorf et al. discloses that the fluid inlet (filter liquid inlet 5) and the backwash fluid outlet (backwashing channel 28) are located in a part of the housing (filter housing 1) extending between the filtered fluid outlet (filtrate outlet 6) and the drive (rotary drive 4). In summary, Sindorf et al. discloses or suggests all limitations recited in claims 15 and 23.

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- i. Regarding claim 18, appellant argues, “Claim 18 is further distinguishable by the exterior surfaces of filter elements being in fluid communication to allow filtered fluid to be used as backwashing fluid. In the Sindorf device, the exterior of the filter element in the backwashing position is isolated from and is not in fluid communication with the exteriors of the other filter elements.” Appeal Brief, p. 10, lines 16-19. Appellant makes a similar argument for claim 25. Appeal Brief, p. 13, lines 12-15.

Claims 18 and 25 follow.

Claim 18. A filter device according to claim 17 wherein exterior surfaces of said filter elements are in fluid communication with one another allowing filtered fluid from said filter elements in said filtration positions to flow to and through said filter element in said backwashing position as backwashing fluid.

Claim 25. A filter device according to claim 19 wherein exterior surfaces of said filter elements are in fluid communication with one another allowing filtered fluid from said filter elements in said filtration positions to flow to and through said filter element in said backwashing position as backwashing fluid.

The examiner responds as in the above patentability analysis. The relevant part of Table 1 appears below.

Table 1: Keying claimed structure to that of the prior art.		
<i>Claimed Structure in Original Specification</i>	<i>Claimed Structure in Substitute Specification</i>	<i>Prior Art.</i>
<i>Filter device, Fig. 1.</i>	<i>Filter device, Fig. 1.</i>	<i>Filter device – Sindorf et al., Fig. 1.</i>
<i>Filter elements (28).</i>	<i>Filter elements – Fig. 1, filter elements 28.</i>	<i>Filter elements – Sindorf et al., Fig. 1, filter insert 12.</i>

In Figs. 1-5, Sindorf et al. teaches the filter elements in fluid communication with one another, as recited in claim 18 (and claim 25). The remaining limitation requires that the

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flow through the filter device is reversed relative to the flow through the Sindorf et al. filter device as disclosed.

Sindorf et al. discloses the claimed invention except that the flow is reversed through the filter device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have arranged the Sindorf et al. filter device parts so that flow was reversed through the filter device, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955).

In summary, Sindorf et al. discloses or suggests all limitations recited in claims 18 and 25.

- j. Regarding claim 19, appellant argues, “Claim 19 is further distinguishable over the Sindorf publication by the claimed arcuate- shaped recess,” because, “The Sindorf openings 18 in plate 17 consist ‘of threaded bores on a common reference circle’ (page 9, paragraph 0014, line 3 of USPTO translation), and thus, are not arcuate. Also, Sindorf openings 18 communicate with outlet 6, not inlet 5, contrary to the claimed structure.” Appeal Brief, p. 12, lines 1-2 and 5-8.

The limitation under discussion follows.

Claim 19 . . .

*a lower part of said filter housing having an **arcuate-shaped recess** over which
several of said filter elements can be located simultaneously in filtration
positions thereof with lower **free open cross sections** in fluid communication*

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*therewith and having a **backwash recess** over which said filter elements are sequentially located in said backwashing position with said **free open cross sections** in fluid communication therewith, said **arcuate-shaped recess** being in fluid communication with said fluid inlet, said **backwash recess** being in fluid communication with said backwash fluid outlet.*

The examiner responds as in the above patentability analysis. The relevant part of Table 1 appears below.

Table 1: Keying claimed structure to that of the prior art.		
<i>Claimed Structure in Original Specification</i>	<i>Claimed Structure in Substitute Specification</i>	<i>Prior Art</i>
<i>Filter elements</i> (28).	<i>Filter elements</i> – Fig. 1, filter elements 28.	<i>Filter elements</i> – Sindorf et al., Fig. 1, filter insert 12.
<i>Inlet opening</i> (46).	<i>Inlet opening</i> – Fig. 1, inlet opening 46.	<i>Inlet opening</i> – Sindorf et al., Fig. 1, opening between filter insert 12 and disk opening 18.
	<i>Arcuate-shaped recess</i> – Fig. 1, kidney-shaped recess 44. <i>Backwash recess</i> – Fig. 1, opening 48. <i>Lower free open cross-section</i> – Fig. 1, lower opening cross section 46.	<i>Arcuate-shaped recess</i> – Sindorf et al., Fig. 1, recess under filter element in filtration mode, i.e. disk opening 18. <i>Backwash recess</i> – Sindorf et al., Fig. 1, recess under filter element in backwash mode, i.e. disk opening 18. <i>Lower free open cross-section</i> – Sindorf et al., Fig. 1, opening between filter insert 12 and disk opening 18.
<i>Filter housing</i> (10).	<i>Housing</i> – Fig. 1, filter housing 10.	<i>Housing</i> – Sindorf et al., Fig. 1, filter housing 1.
<i>Filter inlet</i> (20).	<i>Fluid inlet</i> – Fig. 1, filter inlet 20.	<i>Fluid inlet</i> – Sindorf et al., Fig. 1, filter liquid inlet 5.
<i>Fluid outlet</i> (26).	<i>Backwash fluid outlet</i> – Fig. 1, fluid outlet (26).	<i>Backwash fluid outlet</i> – Sindorf et al., Fig. 1, back washing channel 28.

Sindorf et al. teaches that the lower housing has recesses over which several filter elements (Fig. 1, filter inserts 12) sit during filtration (Fig. 1, recess under filter insert 12 in filtration mode, i.e. disk opening 18) and during backwash (Fig. 1, Fig. 1, recess under filter insert 12 in backwash mode, i.e. disk opening 18). Claim 19 recites a lower free

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open cross section 46 that corresponds to a filter element inlet. Sindorf et al. teaches such a filter element inlet (Fig. 1, opening between filter insert 12 and disk opening 18). The last limitation recited in claim 19 requires that the flow through the filter device is reversed relative to the flow through the Sindorf et al. filter device as disclosed, i.e. “said arcuate-shaped recess being in fluid communication with said fluid inlet.”

Sindorf et al. discloses the claimed invention except that the flow is reversed through the filter device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have arranged the Sindorf et al. filter device parts so that flow was reversed through the filter device, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955).

- k. Regarding claims 13 and 21, appellant argues, “Claim 13 is further distinguishable by the filter elements being conical and arranged in pairs where the filter elements of each pair being diametrically opposite one another in combination with claimed backwash structure.” Appeal Brief, p. 14, lines 2-4 and 9-11.

Regarding claims 16 and 24, appellant further argues, “Claim 16 is further distinguishable by the particular filter elements recited that are not disclosed in the cited patents in combination with claimed backwash structure.” Appeal Brief, p. 14, lines 6-7 and 13-14.

Claims 13 and 21 follow.

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Claim 13. A filter device according to claim 11 wherein said filter elements are conical and are arranged in pairs opposite one another in each pair relative to said pivot axis, each of said filter elements having an (filter element) inlet opening facing toward said drive.

Claim 21. A filter device according to claim 19 wherein said filter elements are conical and are arranged in pairs opposite one another in each pair relative to said pivot axis, each of said filter elements having an (filter element) inlet opening facing toward said drive.

Claim 16. A filter device according to claim 15 wherein each said filter element comprises a bar screen tube filter element.

Claim 24. A filter device according to claim 22 wherein each said filter element comprises a bar screen tube filter element.

The examiner responds as in the above patentability analysis. The relevant part of Table 1 appears below.

Table 1: Keying claimed structure to that of the prior art.		
<i>Claimed Structure in Original Specification</i>	<i>Claimed Structure in Substitute Specification</i>	<i>Prior Art.</i>
<i>Filter device</i> , Fig. 1.	<i>Filter device</i> , Fig. 1.	<i>Filter device</i> – Sindorf et al., Fig. 1.
<i>Filter elements</i> (28).	<i>Filter elements</i> – Fig. 1, filter elements 28.	<i>Filter elements</i> – Sindorf et al., Fig. 1, filter insert 12.
<i>Inlet opening</i> (46).	<i>Inlet opening</i> – Fig. 1, inlet opening 46.	<i>Inlet opening</i> – Sindorf et al., Fig. 1, opening between filter insert 12 and disk opening 18.
<i>Pivoting device</i> (30).	<i>Pivoting device</i> – Fig. 1, pivoting device 30.	<i>Pivoting device</i> – Sindorf et al., Fig. 1, base section 2 and head section 3.
<i>Pivoting axis</i> (36).	<i>Pivot axis</i> – Fig. 1, pivoting axis 36.	<i>Pivot axis</i> – Sindorf et al., Fig. 1, extends longitudinally along axis 10.
<i>Drive</i> (34).	<i>Drive</i> – Fig. 1, drive or motor 34.	<i>Drive</i> – Sindorf et al., Fig. 1, rotary drive 4.

Regarding claim 13 – Sindorf et al. discloses the claimed invention. In Fig. 1, Sindorf et al. further teaches two pairs of paired filter elements (filter inserts 12), each pair opposite

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one another relative to the pivot axis (extends longitudinally along axis 10). However, the Sindorf et al. filter elements have an opening facing away from the drive, instead of towards the drive, as recited. The filter element opening location is a consequence of the drive being placed at the top of the filter device instead of the bottom.

To recap, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have located the Sindorf et al. drive (Fig. 1, rotary 4) at the bottom of the filter device, instead of the top – and to have accordingly located the Sindorf et al. filter element openings (Fig. 1, opening between the filter insert 12 and disk opening 18) facing towards the drive, instead of away from it – thus, meeting all claim 13 limitations. This is an example of using a known technique (couple a free wheel device to a drive) to improve similar devices (the Sindorf et al. filter device with the drive at the top, the Sindorf et al. filter device with the drive at the bottom) in the same way, (construct a “backwashing filter [that] contains a number of independent filter candle elements seated in a rotating plate so that each element can be moved into an isolated backwash chamber.” Sindorf et al., Abstract, lines 1-2).

In the patentability analysis above, then, claim 16 was interpreted such that the recited “bar screen tube filter element” meant a tubular wedge-wire screen filter element. This has support both from the substitute Specification and its original, as well as original claim 10. Substitute Specification, p. 8, lines 28-29; Original Specification, p. 9, lines 13-15. See Point (b) above.

To recap, then, Sindorf et al. discloses the claimed invention except for the conical filter elements [claim 13] that are tubular wedge-wire screen filter elements [claim 16].

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Wnuk et al. teaches such tubular wedge-wire screen filter elements in Figs. 1-3. Wnuk et al. further provides motivation to have made the Sindorf et al. filter element a conical [claim 13], wedge-wire screen filter element [claim 16] when Wnuk et al, states at ¶ 5, lines 2-5 and ¶ 8, lines 1-4, that such a modification would produce a filter element that “is simple and cost-effective and which achieves improved filtration results” because “the overall structure is very rigid and the filter screen is more or less self-supporting to increase the overall stability of the filter element.”

In summary, Sindorf et al., in view of Wnuk for the specifics of the filter element, discloses or suggests all limitations recited in claims 13, 16, 21, and 24.

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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